




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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/379,439	08/23/1999	RAYMOND D. MCINTYRE	10070-1003	1268
23562	7590	06/30/2004	EXAMINER	
BAKER & MCKENZIE PATENT DEPARTMENT 2001 ROSS AVENUE SUITE 2300 DALLAS, TX 75201			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/379,439	Applicant(s) MCINTYRE ET AL.	
	Examiner Hoon Song	Art Unit 2882	

-- Th MAILING DATE of this communication appears on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-46, 51, 53 and 54 is/are allowed.
- 6) ☒ Claim(s) 1-5, 14-30, 47-49, 52 and 55-58 is/are rejected.
- 7) ☒ Claim(s) 5-13 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objection

Claims 50 are 58 are objected to because of the following informalities:

In claim 50 line 1, "said positioning" lacks proper antecedent basis.

In claim 58 line 6, Insert --and-- at the end of the line 6.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2 and 47, 55-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Lidsky et al. (US 5784423).

Regarding claim 2, Lidsky teaches a target irradiation system comprising:

An x-ray source (14) comprising a medical linear accelerator (16) operable to emit x-rays;

A target object (38) capable of becoming radioactive upon receiving the emitted x-rays and

A relative positioning apparatus (48) operable to place the target object relative to the x-rays (figure 5).

Regarding claim 47, Lidsky teaches a target irradiation system (figure 2) comprising:

an electron beam source (16) providing a beam of electrons (18) ;

an x-ray conversion target (14) in fixed relation to the electron beam source in the path of the beam of electrons from the electron beam source, the x-ray conversion target (14) including an x-ray generating material activated by the beam of electrons to emit said x-rays (20);

a target object (12) capable of becoming radioactive upon receiving the emitted x-rays;

an electron beam directing apparatus (collimator) between the electron beam source (16) and the x-ray conversion target (14); and

a retaining apparatus (48) retaining the target object (38, 40, 42) in relation to receive the emitted x-rays (20) along a longitudinal surface (see a contact surface of the push rod (48)) thereof positioned a direction substantially transverse to the direction of the emitted x-rays.

Regarding claims 55, 57 and 58, Lidsky teaches a method and apparatus of irradiating a target object comprising:

Providing a beam of electrons (18) using a medial linear accelerator (16);

Positioning an x-ray conversion (14) target in fixed relation to said beam of electrons (18) and impinging upon and receiving said beam of electrons;

Emitting x-rays (20) from the x-ray conversion target (14) when activated by said beam of electrons (18);

Selecting a target object (38) capable of becoming radioactive upon receiving the emitted x-rays (20); and

Moving (48) at least one of target object (38) in relation to said x-ray conversion target and in the path of the x-rays emitted by said x-ray conversion target (14).

Regarding claim 56, Lidsky teaches a retaining apparatus (36) retaining the target object in relation to said electron beam source.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 14-30, 48-49 are 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lidsky et al. (US 5784423) in view of Peterson (US 3995162).

Regarding claim 1, Lidsky teaches a target irradiation system (5) comprising:
an x-ray source (14) operable to emit x-rays (20) and
a target object (38, 40, 42) capable of becoming radioactive upon receiving the emitted x-rays.

However Lidsky fails to teach a relative positioning apparatus (48) operable to translate the target object, positioned to receive the emitted x-rays, in a direction substantially transverse to the direction of the emitted x-rays.

Peterson teaches a small articles irradiation system having a relative positioning apparatus (48) operable to translate a target object (44), positioned to receive an

emitted x-rays (40), in a direction substantially transverse to the direction of the emitted x-rays (figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the irradiation system of Linsky with the relative positioning apparatus as taught by Peterson, since the relative positioning system of Peterson would irradiate the x-rays at a series of articles (column 2 line 29-34) so that it would prevent interference of the x-ray irradiation between the adjacently located target objects and also it would provide automatic, economical mass production of the radioactive objects.

Regarding claim 3, Lidsky teaches that said x-ray source includes means for emitting an x-ray beam including said x-rays and said system further comprising a means for shaping (collimator) said x-ray beam.

Regarding claim 4, Lidsky teaches that said target object comprises an implantable medical object (column 3 line 9).

Regarding claims 14-20, Lidsky fails to teach a parameter measuring sensor and control circuit but one would be motivated to adapt the known sensor and control circuit in order to properly operate the apparatus.

Regarding claim 21, Peterson teaches that said relative positioning apparatus includes a fixed positioning member (50, 52) retaining at least one target object (44) in generally fixed relation to said x-ray source while positioned in the path of said x-rays (figure 3).

Regarding claim 22, Lidsky teaches that an electron beam directing apparatus between the electron beam source and an x-ray conversion target (figure 5).

Regarding claim 23, Lidsky teaches that said electron beam directing apparatus includes a magnetic means for directing the electron beam (figure 5).

Regarding claim 24, Lidsky teaches that a heat transfer system conduction heat away from an x-ray conversion target (figure 3).

Regarding claim 25, Lidsky teaches that said heat transfer system includes a conduit (79) for conveying a heat transfer fluid (figure 3).

Regarding claim 26, Lidsky teaches that a thermal shield between an x-ray conversion target and at least one target object positioned on said relative positioning apparatus (figure 3).

Regarding claim 27, Lidsky teaches an x-ray conversion target includes a plurality of layers wherein: at least a first one of said layers comprises x-ray generating material; at least a second one of said layers comprises an electron absorption apparatus between said x-ray generating material layer and said at least one target object positioned by said relative positioning apparatus (figure 3)

Regarding claim 28, Lidsky teaches that a thermal shield between said x-ray conversion target and said relative positioning apparatus (figure 3).

Regarding claims 29-30, Peterson teaches a chamber (16) downstream of the x-ray source, said chamber including a target object entry port and wherein said relative positioning apparatus includes a translation armature extendable through said target object entry port (figure 2).

Regarding claim 48, Lidsky teaches a target irradiation system comprising:
an x-ray source means for generating x-rays (14); and
a target object (38) capable of becoming radioactive upon receiving the generated x-rays.

However Lidsky fails to teach a relative positioning apparatus (48) operable to translate the target object, positioned to receive the emitted x-rays, in a direction substantially transverse to the direction of the emitted x-rays.

Peterson teaches a small articles irradiation system having a relative positioning apparatus (48) operable to translate a target object (44), positioned to receive an emitted x-rays (40), in a direction substantially transverse to the direction of the emitted x-rays (figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the irradiation system of Lidsky with the relative positioning apparatus as taught by Peterson, since the relative positioning system of Peterson would irradiate the x-rays at a series of articles (column 2 line 29-34) so that it would prevent interference of the x-ray irradiation between the adjacently located target objects and also it would provide automatic, economical mass production of the radioactive objects.

Regarding claim 49, Lidsky teaches that said x-ray source comprises:
an electron beam (18) source means providing a beam of electrons;
an x-ray conversion target (14) means in fixed relation to the electron beam source in the path of the beam of electrons from the electron beam source, the x-ray

conversion target including an x-ray generating material means for emitting x-rays when activated by said beam of electrons (figure 5).

Regarding claim 52, Lidsky teaches a method of irradiating a target object comprising:

providing a beam of electrons (18);

positioning an x-ray conversion target (14) in fixed relation to said beam of electrons and impinging upon and receiving said beam of electrons;

emitting x-rays from the x-ray conversion target when activated by said beam of electrons;

selecting a target object (38) capable of becoming radioactive upon receiving the emitted x-rays;

However Lidsky fails to teach moving said target object in relation to said x-ray conversion target in a direction substantially transverse to the direction of the emitted x-rays and in the path of the x-rays emitted by said x-ray conversion target.

Peterson teaches moving said target object in relation to said x-ray conversion target in a direction substantially transverse to the direction of the emitted x-rays and in the path of the x-rays emitted by said x-ray conversion target.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the irradiation system of Lidsky with the transversely moving method as taught by Peterson, since the method of Peterson would irradiate the x-rays at a series of articles (column 2 line 29-34) so that it would prevent interference of the x-

ray irradiation between the adjacently located target objects and also it would provide automatic, economical mass production of the radioactive objects.

Allowable Subject Matter

Claims 31-46, 51 and 53-54 are allowed over prior art.

Claims 5-13 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5-6, 31-40 and 50, the prior art fails to teach that said relative positioning system includes a rotatable carousel at least a portion of which is impinged upon by and receives at least a portion of said x-rays, said rotatable carousel including at least one target mount for retaining at least one target object in fixed relation to said rotatable carousel as claimed in dependent claims 5 and 50 and independent claim 51.

Regarding claims 7-12, the prior art fails to teach that said relative positioning apparatus includes a tube assembly having: a stationary member defining an interior path for receiving the target object; and a translation assembly for moving the target object along a path within said stationary member, said path positioned such that the target object receives said x-rays emitted from said x-ray source as claimed in dependent claims 7.

Regarding claim 13, the prior art fails to teach that said relative positioning apparatus includes a tube assembly having: a substantially stationary tube defining an internal target object conduit path and a translation assembly for moving the target

object within said stationary tube along a desired path positioned to be impinged upon by said x-rays emitted from said x-ray source.

Regarding claim 41-45, the prior art fails to teach that a target irradiating system comprising: a positioning assembly including a linear movable translation armature said translation armature mounted to said positioning assembly at least for linear motion in an axial direction and said translation armature including a mounting apparatus mounting at least one target object; an x-ray conversion target mounted on said translation armature between said translation armature and said electron beam source wherein said x-ray conversion target defines a radial access region providing access to said at least one target object and said x-ray conversion target includes an x-ray generating material activated by said beam of electrons to emit x-ray and target object capable of becoming radioactive upon receiving the emitted x-ray as claimed in independent claim 41.

Regarding claim 54, the prior art fails to teach an irradiated medical stent produced using a process of moving at least one medical stent in the path of said x-ray emitted by the x-ray conversion target and in a direction substantially transverse to the direction of the emitted x-rays, said at least one medical stent becoming irradiated when receiving the emitted x-rays as claimed in independent claim 54.

Response to Arguments

Applicant's arguments with respect to claims 1-54 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2882

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

6/23/04
HKS


DAVID V. BRUCE
PRIMARY EXAMINER